Outcomes Following Nonoperative Treatment of Isolated Posterior Malleolar Ankle Fractures

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No Conflict to Disclose

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Our disclosures are in the Final AOFAS Mobile App. We have no potential conflicts with this presentation.
Background

• Isolated posterior malleolar ankle fractures are rare and makeup 0.5%-4% of all ankles fractures\(^1\).

• Axial loading of the foot in plantar flexion is thought to be the most likely mechanism of injury\(^1\text{-}^4\).

• Management of isolated posterior malleolar fractures presents challenges for clinicians\(^5\text{-}^7\).

• The purpose of this study was to assess outcomes in a series of patients, who were consecutively treated nonoperatively for isolated posterior malleolus ankle fractures.
Figure 1: Ankle radiographs of an isolated posterior malleolus fracture. Though these fractures are best visualized on the lateral view (A, arrow), AP or mortise (B) views may sometimes demonstrate a faint fracture line or a double cortical density sign (double arrows).
Figure 2: Axial (A) and sagittal (B) images of an ankle CT scan demonstrating an isolated posterior malleolus fracture. Compared to plain radiographs, ankle CT scan allows for better evaluation of fracture fragment size, area of articular surface involvement, displacement, impaction, and comminution.
Methods

• Outcomes of patients who were all treated non-operatively at two academic teaching hospitals for isolated posterior malleolus fractures were retrospectively reviewed.

• Patients were excluded if there was evidence of associated ligamentous injury or other fractures of the foot or ankle.

• The size of the posterior malleolar fracture fragment was measured on lateral ankle radiographs.

• Clinical outcomes were evaluated using the American Academy of Orthopaedic Surgeons (AAOS) Foot and Ankle Survey.
28 patients (17 males, 11 females) were included.

Average age at injury: 36.25

Average follow up time: 31 months.

The average “Foot and Ankle Core Scale” and “Shoe Comfort Scale” scores were 90.4 (±11.2) and 80.0 (±28.9), respectively.

Compared to normative data from the general population, no significant differences were found in these scores (Foot and Ankle Core Scale: $P = 0.234$, Shoe Comfort Scale: $P = 0.276$).
Results

• There was no significant association between these scores and the size of fracture fragment.
• At follow-up, no patients demonstrated signs of instability, malalignment of the mortise or post-traumatic arthritis.
Discussion

• Largest study to date evaluating outcomes of isolated posterior malleolus fractures in patients treated nonoperatively.

• This series demonstrates short- to mid-term functional outcomes that are no different than reported normative data for the general population.

• These findings are consistent with previously reported clinical outcomes and suggest that nonoperative management is a viable treatment option for isolated posterior malleolar fractures.


